



Learning Activities Supporting, Taking, and Understanding Measurements

Observing, Describing, and Identifying Clouds

Students begin to learn cloud types and their names.

Estimating Cloud Cover: A Simulation

Students practice estimating how much of the sky is covered by clouds.

Cloud Watch

Students monitor clouds and weather to begin to understand the connections between the two.

Observing Visibility and Sky Color

Students observe sky color and learn to associate color with the presence or absence of aerosols.

Making a Sundial

Students study the movement of the sun during the day by making quantitative observations of the direction and length of the shadow cast by a stick (known as a solar gnomon).

Calculating Relative Air Mass

Students are introduced to the concepts of solar elevation angle and relative air mass and learn how to determine relative air mass from measurements of solar elevation angle.

Studying the Instrument Shelter*

Students explore how the placement and design of instrument shelters can influence temperature measurements taken from thermometers located inside them.

Building a Thermometer*

Students construct simple thermometers to understand how and why liquid-in-glass thermometers work.

Constructing a Model of Parts Per Billion of Surface Ozone*

Students construct and compare cubes of different volumes to gain insight into small concentrations such as a part per million and a part per billion.

Learning Activities Supporting the Use of Visualizations to Look at Data

Making a Contour Map*

Students construct one or more contour maps using GLOBE data.

Draw Your Own Visualization*

Students draw a visualization and learn about all the design choices involved and how these choices affect what is communicated by the visualization.

Learning to Use Visualizations: An Example With Elevation and Temperature*

Students use visualizations to explore the relation between elevation and temperature and begin learning how to make important patterns evident in visualizations.

* See the full e-guide version of the *Teacher's Guide* available on the GLOBE Web site and CD-ROM.